

ABSTRACT

The present invention provides a method and apparatus of converting a stream of pixel data in space and time into a stream of bitplane data. In particular, the present invention converts the pixel data stream according to a predetermined output format. The apparatus of the present invention receives the pixel data in a "real-time" fashion, and dynamically performs predefined permutations so as to accomplish the predefined transpose operation. Alternatively, the pixel data are stored in a storage medium, and the apparatus of the present invention retrieves the pixel data and performs the predefined permutation to accomplish the predefined transpose operation. The methods and apparatus disclosed herein are especially useful for processing a high-speed stream of digital data in a flow-through manner and suitable for implementation in a hardware video pipeline. The control signal fanout and gate count of this invention are reduced compared to currently available similar techniques for converting pixel data into bitplane data.